

THAT WHICH IS CLAIMED IS:

1. A method for treating prostatitis, comprising:
positioning a transurethral catheter with a treatment balloon mounted thereon in the prostatic urethra of a subject;
expanding the treatment balloon after the positioning step so that the expanded treatment balloon contacts prostatic tissue;
internally massaging the prostate by altering the pressure in the expanded treatment balloon such that the expanded treatment balloon repetitively laterally expands and contracts a desired distance in the prostatic urethra; and
concurrently heating the prostatic urethra during said massaging step to thereby treat the subject for prostatitis.
2. A method according to Claim 1, wherein said heating step comprises heating fluid external of the body of the subject to a temperature of between about 40-47°C, and wherein said method further comprises directing the heated fluid to travel in the catheter to the treatment balloon for a period of at least about 20 minutes.
3. A method according to Claim 2, wherein said heating step heats the fluid to about 45°C, wherein said directing step directs the heated fluid to travel in the catheter to the treatment balloon for about 20-60 minutes.
4. A method according to Claim 1, wherein said internally massaging step is carried out by circulating pulsating heated fluid in an enclosed circulating travel path.
5. A method according to Claim 4, wherein the circulating travel path is defined by a closed loop system which includes the catheter, an inlet conduit and an outlet conduit in fluid communication with the catheter, and a heater, pump, and temperature sensors operably associated with the catheter, and wherein said massaging step comprises adding fluid to the closed loop system to increase the pressure in the treatment balloon at desired intervals over the duration of the treatment period.

6. A method according to Claim 1, wherein the prostatic urethra is heated during said heating step to an elevated temperature of between about 50-60°C for a portion of the treatment and then heated to a decreased temperature of between about 40-47°C for a subsequent portion of time during the treatment.

7. A method according to Claim 6, wherein said heating step comprises heating fluid external of the body of the subject and directing the heated fluid to travel in the catheter to the treatment balloon.

8. A method according to Claim 7, wherein said heating step is carried out such that the prostatic urethra is exposed to the elevated temperature for a period of between about 5-10 minutes during a beginning portion of the treatment and then exposed to about 40-45°C for about 20-50 minutes during a second portion of the treatment.

9. A method according to Claim 8, wherein the pressure in the expanded balloon is increased during the second portion of the treatment.

10. A method according to Claim 9, wherein the repetitive lateral expansion and contraction is carried out at a rate of about 1-5 cycles per second.

11. A method according to Claim 1, wherein the expanded treatment balloon is sized and configured to reside in the prostatic urethra above the verumontanum during said heating and massaging steps.

12. A method according to Claim 1, further comprising the step of administering a therapeutic agent to the subject proximate in time to said treatment to facilitate the success of treatment.

13. A method according to Claim 12, wherein said administering step is carried out at about 12-72 hours after said treatment.

14. A method according to Claim 13, wherein said therapeutic agent comprises an antioxidant.

15. A method according to Claim 13, wherein said therapeutic agent comprises quercetin.

16. A method according to Claim 15, wherein said therapeutic agent comprises a phytotherapeutic agent.

17. A method according to Claim 12, wherein said therapeutic agent comprises an anti-inflammatory agent.

18. A method according to Claim 12, wherein said therapeutic agent comprises an antibiotic.

19. A method according to Claim 12, wherein said therapeutic agent comprises finasteride.

20. A method according to Claim 1, wherein said treatment is carried out proximate in time to administering radiation to the prostate of the subject.

21. A method for treating prostatitis in a subject, comprising:

(a) inserting a catheter with at least one expandable treatment balloon thereon into the urethra of a subject, the treatment balloon positioned to extend outwardly about the perimeter of a portion of the catheter;

(b) heating fluid to a desired temperature;

(c) directing heated fluid such that it travels captured through the catheter to the at least one expandable treatment balloon;

(d) inflating the at least one treatment balloon responsive to the directing step, wherein, in position, the inflated treatment balloon takes on a radially expanded configuration and circumferentially contacts targeted tissue in the prostatic urethra;

(e) internally massaging a portion of the prostatic urethra by repetitively altering the fluid pressure in the treatment balloon causing the treatment balloon to repetitively expand and contract a desired distance in response thereto; and

(f) heating a targeted region in the prostatic urethra to a temperature of between about 40-47°C for a desired treatment time of at least 20 minutes concurrently with said massaging step thereby performing a thermal massage of the prostate.

22. A method according to Claim 21, wherein said method is repeated in about 18 hours to about 1 week from the first treatment.

23. A method according to Claim 21, wherein said heating step heats the fluid to about 45°C to heat prostatic tissue for about 20-60 minutes.

24. A method according to Claim 21, wherein a portion of the prostatic urethra is heated during step (f) to an elevated temperature of between about 50-60°C for a portion of the treatment and then heated to a decreased temperature of between about 40-47°C for a subsequent portion of the treatment.

25. A method according to Claim 21, wherein said internally massaging step comprises circulating pulsating heated fluid in an enclosed circulating travel path.

26. A method according to Claim 24, wherein step (f) is carried out such that the prostatic urethra is exposed to the elevated temperature for about 1-10 minutes during a beginning portion of the treatment and then exposed to a reduced temperature of about 40-45°C for about 20-50 minutes during a second portion of the treatment.

27. A method according to Claim 21, further comprising increasing the massage pressure in the expanded balloon by at least about 10% during the treatment.

28. A method according to Claim 21, wherein the treatment balloon is repetitively expanded and contracted at a rate of about 1-5 times per second.

29. A method according to Claim 21, wherein the expanded treatment balloon is sized and configured to reside in the prostatic urethra above the verumontanum during said heating and massaging steps.

30. A method according to Claim 21, further comprising the step of administering a therapeutic agent to the subject proximate in time to said thermal massage treatment to facilitate the success of treating prostatitis.

31. A method according to Claim 30, wherein said administering step is carried out at about 12-72 hours after said thermal massage treatment.

32. A method according to Claim 30, wherein said therapeutic agent comprises an antioxidant.

33. A method according to Claim 30, wherein said therapeutic agent comprises quercetin.

34. A method according to Claim 30, wherein said therapeutic agent comprises a phytotherapeutic agent.

35. A method according to Claim 30, wherein said therapeutic agent comprises an anti-inflammatory agent.

36. A method according to Claim 30, wherein said therapeutic agent comprises an antibiotic.

37. A method according to Claim 30, wherein said therapeutic agent comprises finasteride.

38. A method according to Claim 21, wherein the treatment is carried out proximate in time to administering radiation to the prostate of the subject.

39. A set of prostatitis treatment catheters having expandable treatment balloons, the treatment balloons configured on a flexible catheter sized and configured to be inserted into the male urethra, wherein said treatment balloons are sized in 0.5cm increments from about 1 cm to 6 cm such that, in operation, a selected treatment balloon resides above the verumontanum of the subject in the prostatic urethra.

40. A set of treatment catheters according to Claim 39, wherein the treatment balloons are thermal massage treatment balloons configured to repetitively laterally expand and contract over a desired treatment period and to emit heat therefrom.

41. A set of treatment catheters according to Claim 39, wherein the catheters are configured to circulate heated fluid therein to cause the treatment balloon to pulsate responsive thereto.

42. A computer program product for controlling an internally delivered thermal massage treatment for prostatitis, the thermal massage treatment being provided by a closed loop system having a heater, a pump, and a trans-luminal catheter configured and sized to be inserted through the male urethra and having an outwardly expandable treatment balloon thereon and configured, in operation, to repetitively expand and contract to provide a massage to the tissue located proximate thereto while the catheter circulates heated fluid via the expandable treatment balloon, the computer program product comprising:

a computer readable storage medium having computer readable program code embodied in said medium, said computer-readable program code comprising:

computer readable program code for controlling the temperature of fluid circulating in the catheter so that the temperature of the fluid entering the catheter to travel to the expandable treatment balloon is between about 40-47°C; and

computer readable program code for timing the duration of the thermal massage treatment so that the treatment lasts from about 20 minutes to 1 hour.

43. A computer program product according to Claim 42, comprising computer readable program code for adjusting the massage generated by the expandable treatment balloon during the treatment by altering one of the pumping speed or pressure in the balloon.

44. A computer readable product according to Claim 42, comprising computer readable program code for adjusting the rate of the expansion and contraction of the expandable balloon to thereby adjust the massage rate provided thereby.

45. A computer program product according to Claim 42, wherein the computer program code for controlling the time and temperature of the thermal massage treatment is configured so that the treatment is carried out at a temperature of about 45°C as measured prior to its inlet into the catheter and wherein the duration of the treatment is about 30-40 minutes.

46. A computer program product according to Claim 42, wherein said computer readable program code for controlling the temperature of fluid circulating in the catheter is configured so that the temperature at the expanded treatment balloon is between about 40-47°C for a major portion of the thermal massage treatment and at a temperature elevated above this temperature range for another portion of the treatment.

47. A computer program product according to Claim 46, wherein said computer readable program code for timing the duration of the thermal massage treatment comprises code for timing the major portion of the treatment to extend from about 20-50 minutes and timing the elevated portion of the treatment to be at about 1-10 minutes, wherein together the sum of each of the portions being about 21 minutes to 1 hour.

48. A computer program product according to Claim 46, wherein the elevated temperature is from about 50-60°C and the associated treatment duration is about 1-10 minutes, and wherein the computer program times the delivery of the

elevated temperature such that it occurs during a beginning portion of the treatment and wherein the major portion of the treatment is carried out at a temperature of about 40-45°C thereafter.

49. A computer program product according to Claim 42, further comprising computer program code for increasing the massage pressure provided by the expanded balloon by at least about 10% during the treatment based on the input of the patient undergoing the treatment.

50. A method for treating prostatitis, comprising:

(a) inserting a catheter with at least one expandable treatment balloon thereon into the urethra of a subject, the treatment balloon positioned to extend outwardly about the perimeter of a portion of the catheter;

(b) heating fluid to a desired temperature;

(c) directing heated fluid such that it travels captured through the catheter to the at least one expandable treatment balloon;

(d) inflating the at least one treatment balloon responsive to the directing step, wherein, in position, the inflated treatment balloon takes on a radially expanded configuration and circumferentially contacts targeted tissue in the prostatic urethra; and

(e) heating a targeted region in the prostatic urethra to a temperature of between about 40-47°C for a desired treatment time of at least 20 minutes thereby administering a thermal therapy to the prostate.

51. A method according to Claim 50, wherein said method is repeated in about 18 hours to about 1 month from the first treatment.

52. A method according to Claim 50, wherein said heating step heats the fluid to about 45°C to heat prostatic tissue for about 20-60 minutes.